



Woodworking Foundations

Course: Woodworking and Design 5 and 6		Total Framework Hours up to: 180
CIP Code: 480701	<input checked="" type="checkbox"/> Exploratory <input type="checkbox"/> Preparatory	Date Last Modified: 4/11/2016
Career Cluster: Manufacturing		Cluster Pathway: Production

COMPONENTS AND ASSESSMENTS

Performance Assessments: 1. Structured observation of the individuals or groups focusing on the prominent skills or concepts being observed. 2. Multiple choice, essay, true / false questions that exhibit a student’s understanding of the knowledge being assessed. 3. Graphic representations that reveal a student’s understanding of connections among ideas. Through project selection and performance following the Core concepts 1.1 through 1.17 students will design, build and display their work.

Leadership Alignment: State of Washington 21st Century Leadership & Employability Skills Standards, as developed from *Partnership for 21st Century Skills* organization, within the Career and Technical courses.

Think Creatively

- 1.A.1 Use a wide range of idea creation techniques (such as brainstorming)
- 1.A.2 Create new and worthwhile ideas (both incremental and radical concepts)

Work Creatively with Others

- 1.B.1 Develop, implement and communicate new ideas to others effectively
- 1.B.4 View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Make Judgments and Decisions

- 2.C.1 Effectively analyze and evaluate evidence, arguments, claims and beliefs

Reason Effectively

- 2.A.1 Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

Solve Problems

- 2.D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways

Standards and Competencies

Content Standard A: The student will demonstrate an understanding of core concepts of: course expectations, career fields, time management, planning, material uses and scheduling as they pertain to the woodworking industry. **Content Standard B:** Perform trade specific mathematical calculations for the purpose of designing, material selection, material costs, scheduling, and construction from plans. As well as identification, understanding, and use of measurement tools associated within this industry. **Content Standard C:** Identify, understand and perform

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acceptable safety practices and policies pertaining to work areas and the proper use of hand tools, portable power tools, stationary equipment, and CNC machinery. Content Standard D: Identify, perform, and understand tasks demonstrating proper applications that; hold, join, and fasten materials. As well as preparation for and application of finish products.

Competencies		Total Learning Hours for Unit: 120
Core Concepts:		Woodworking and Design 5-6
1.1	Course goals and expectations.	
1.2	In depth personal and industrial safety.	
1.3	MSDS / Hazardous materials.	
1.4	Design process.	
1.5	Visual Art Fundamentals	
1.6	Billing and Efficient Usage of Materials	
1.7	Project Scheduling and Mass Production	
1.8	Quality Control	
1.9	Identification and application of natural wood products.	
1.10	Identification and application of manufactured wood products.	
1.11	Proper woodworking tool and machinery usage.	
1.12	CAD, CAM, CNC Woodworking Applications.	
1.13	Woodworking Laser Applications.	
1.14	Advanced woodworking joinery characteristics -- strength, artistic expression, etc.	
1.15	Advanced Finishing Applications.	
1.16	Visual Art incorporated in Woodworking overview.	
1.17	Integration of Visual Art concepts through individual student projects.	
Aligned Washington State Standards		
Health and Fitness	3.1.3 Evaluates environmental risks associated with certain occupational, residential, and recreational choices.	
Educational Technology	1.1.3 Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.	
Language	L 1.8 Determine the meaning of words and phrases in oral presentations and literary and informational text	
Reading	RST 9-10 -3 Follow precisely a complex multistep procedure when carrying out experiments, or performing technical tasks, attending to special cases or exceptions defined in the text. RST 9-10 -4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 text and topics	
Social Studies	2.1 Understands that people have to make choices between wants and needs and evaluate the outcomes of those choices.	

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Speaking and Listening	<p>1.1.1 Applies a variety of listening strategies to accommodate the listening situation.</p> <p>1.1.2 Applies a variety of listening and observation skills/strategies to recall and interpret information.</p> <p>2.2.2 Applies skills and strategies to contribute responsibly in a group setting.</p>
Writing	<p>3.1.1 Analyzes ideas, selects a manageable topic, and elaborates using specific, relevant details and/or examples.</p> <p>3.3.6 Uses complete sentences in writing.</p>
Math	<p>6&7.RP Understand ratio concepts and use ratio reasoning to solve problems</p> <p>6&7.NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p> <p>A-CED Create equations that describe numbers or relationships</p> <p>A-REI Understand solving equations as a process of reasoning and explain the reasoning</p> <p>Solve equations and inequalities in one variable</p> <ol style="list-style-type: none"> 1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. 2. Define appropriate quantities for the purpose of descriptive modeling. 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Arts Arts	<p>1.1 The student understands and applies arts knowledge and skills in dance, music, theatre, and visual arts.</p> <p>1.2.1 Remembers and applies the skills and techniques of visual arts to create original works of art in two and/or three dimensions.</p> <p>2.1 Applies a creative process to visual arts. (Identifies, explores, gathers, interprets, uses, implements, reflects, refines, and presents)</p> <p>3.1.1 Remembers that visual arts are used to express feelings and present ideas and applies this understanding when creating and considering artworks.</p> <p>3.3 Develops personal aesthetic criteria to communicate artistic choices in visual arts.</p> <p>4.1.1 Remembers skills, concepts, and vocabulary that the discipline of visual arts has in common with other arts disciplines.</p> <p>4.5 Understands how arts knowledge and skills are used in the world of work, including careers in the arts.</p>

COMPONENTS AND ASSESSMENTS

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Work Creatively with Others

1.B.4 View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Implement Innovations

1.C.1 Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

Make Judgments and Decisions

2.C.4 Interpret information and draw conclusions based on the best analysis

Collaborate with Others

3.B.2 Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal

Use and Manage Information

4.B.1 Use information accurately and creatively for the issue or problem at hand

Be Self-Directed Learners

8.C.1 Go beyond basic mastery of skills and/or curriculum to explore and expand one’s own learning and opportunities to gain expertise

Produce Results

10.B.1 Demonstrate additional attributes associated with producing high quality products

(See Leadership document attached under Leadership tab.)

Standards and Competencies

Content Standard A: The student will demonstrate an understanding of core concepts of: course expectations, career fields, time management, planning, material uses and scheduling as they pertain to the woodworking industry. Standard E: Identify, understanding and perform the proper use of group dynamics, diversity training, problem solving, and employer / employee relations.

Competencies

Total Learning Hours for Unit: 40

Core Concepts:

Individual Leadership and Development

2.1	Project Selection.
2.2	Problem Solving Procedures.
2.3	Project materials characteristics and applications.
2.4	Business Industry processes; documentation, deadlines, workflow
2.5	Work Ethic
2.6	Presentation Skills
2.7	Employability Skills; Abilities, Expectations, Attitudes, Portfolio.
2.8	Industry Certification; Woodworker Career Alliance (WCA), National Construction Career Educational Resource. (NCCER)

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Health and Fitness	3.1.3 Evaluates environmental risks associated with certain occupational, residential, and recreational choices.
Educational Technology	1.3.2 Locate and organize information from a variety of sources and media.
Language	L 1.8 Determine the meaning of words and phrases in oral presentations and literary and informational text.
Reading	RST 9-10 -3 Follow precisely a complex multistep procedure when carrying out experiments, or performing technical tasks, attending to special cases or exceptions defined in the text. RST 9-10 -4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 text and topics
Social Studies	2.1 Understands that people have to make choices between wants and needs and evaluate the outcomes of those choices.
Speaking and Listening	1.1.1 Applies a variety of listening strategies to accommodate the listening situation. 1.1.2 Applies a variety of listening and observation skills/strategies to recall and interpret information. 2.2.2 Applies skills and strategies to contribute responsibly in a group setting.
Writing	3.1.1 Analyzes ideas, selects a manageable topic, and elaborates using specific, relevant details and/or examples. 3.3.6 Uses complete sentences in writing.
Math	6&7.RP Understand ratio concepts and use ratio reasoning to solve problems 6&7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. 1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. 2. Define appropriate quantities for the purpose of descriptive modeling. 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Arts	1.2 The student understands and applies arts knowledge and skills in dance, music, theatre, and visual arts. 1.2.1 Remembers and applies the skills and techniques of visual arts to create original works of art in two and/or three dimensions. 2.1 Applies a creative process to visual arts. (Identifies, explores, gathers, interprets, uses, implements, reflects, refines, and presents) 3.1.1 Remembers that visual arts are used to express feelings and present ideas and applies this understanding when creating and considering artworks. 3.3 Develops personal aesthetic criteria to communicate artistic choices in visual arts. 4.1.1 Remembers skills, concepts, and vocabulary that the discipline of visual arts has in common with other arts disciplines. 4.5 Understands how arts knowledge and skills are used in the world of work, including careers in the arts.

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Leadership Alignment: State of Washington 21st Century Leadership & Employability Skills Standards, as developed from *Partnership for 21st Century Skills* organization, within the Career and Technical courses.

Manage Goals and Time

8.A.1 Set goals with tangible and intangible success criteria.

Be a self-directed learner

8.C.1 Go beyond basic mastery of skills and/or curriculum to explore and expand ones’ own learning and opportunities to gain expertise.

Work effectively with diverse teams

9.B.1 Respect cultural differences and work effectively with people from a range of social and cultural backgrounds.

(See attached document under Leadership tab)

Standards and Competencies

Content Standard E: The student will identify, understand, and perform the proper use of group dynamics, diversity training, problem solving techniques, and employee / employer relationships.

Competencies

Total Learning Hours for Unit: 20

Core Concepts

Group and Community Leadership

- 3.1 Active membership in a CTSO (SkillsUSA, TSA).
- 3.2 Involvement in a group or community based project.
- 3.3 Understanding of group dynamics.
- 3.4 Implementation of a mass production project / activity.
- 3.5 Recognizing Diversity in school and the workplace.
- 3.6 Knowledge or participation of Work Based Learning opportunities.

Aligned Washington State Standards

Educational Technology	1.3.3 Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.
Health and Fitness	2.4: Acquires skills to live safely and reduce health risks.
Language	L 1.8 Determine the meaning of words and phrases in oral presentations and literary and informational text.
Reading	RST 9-10 -3 Follow precisely a complex multistep procedure when carrying out experiments, or performing technical tasks, attending to special cases or exceptions defined in the text. RST 9-10 -4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 text and topics

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